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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/553,083	10/11/2005	Takuma Hojo	SHIGA7.029APC	2712

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EXAMINER

HAMILTON, CYNTHIA

ART UNIT	PAPER NUMBER
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1795

NOTIFICATION DATE	DELIVERY MODE
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03/20/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/553,083	Applicant(s) HOJO ET AL.	
	Examiner Cynthia Hamilton	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 November 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 4-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 4-14 is/are rejected.
- 7) ☒ Claim(s) 1, 4 and 15 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 29 November 2005 has been entered.

2. The information disclosure statement filed on 29 November 2007 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document. Applicants have cited the foreign documents of JP 2002-341538 but did not submit the documents. No Foreign patent documents were submitted on 02 October 2007, either. If applicants are submitting only translations or abstracts, then citation should be made under the Non patent literature Documents section with dates of documents given, e.g. the date the abstract was printed or obtained. If a foreign patent document is cited, it needs to be submitted in full. The documents submitted were fully considered. Since the submission appears to be *bona fide*, applicant is given **ONE (1) MONTH** from the date of this notice to supply the above mentioned omissions or corrections in the information disclosure statement. **NO EXTENSION OF THIS TIME LIMIT MAY BE GRANTED UNDER EITHER 37 CFR 1.136(a) OR (b).** Failure to timely comply with this notice will result in the above mentioned information disclosure statement being placed in the application file with the noncomplying information **not** being considered. See 37 CFR 1.97(i).

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3. The examiner has cited on attached PTO 892 form both the abstract sent and translation sent by applicants as well as adding to the record both Japanese documents not submitted by applicants.

4. Claim 1 is objected to because of the following informalities: There are two periods present in claim 1. The last at the end belongs, but the one at the end of line 24 does not belong. Appropriate correction is required.

5. Claim 4 is objected to because of the following informalities: In line 2 "adamantly" should be -- adamanyl -- . Appropriate correction is required.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claim 13 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 13 has limits to proportions of said polymer and said copolymer within a range from about 20:80 to 50:50. What kind of proportion unit is not specified. Thus, it is unclear if this is weight or volume or as found on page 23, in lines 16-20, and page 24, lines 15-18, of the specification, molar ratio? How was the molar ratio measured? Is this moles of chains of polymer? Thus, what is encompassed by this proportion is unclear in claim 13.

8. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

9. Claim 13 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described

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in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Applicants have added new claim 13 which is as follows:

13. (New) The positive resist composition according to claim 1, wherein the proportion of said mixture of said polymer and said copolymer is within the range from 20:80 to 50:50.

. For support of this new claim applicants pointed to the specification at Examples 7-10. There are only two ratios given in these examples which could be considered support. the are found on page 23, in lines 16-20, and page 24, lines 15-18. One is a molar ratio between polymers wherein a polycyclic aromatic group forms the ketal/acetal (II) group and the other is where a polycyclic aliphatic group forms the ketal/acetal (II) group. The examiner also has taken into consideration page 10, lines 5-20, of the specification wherein the mol% of acid dissociable, dissolution inhibiting groups appears to be the critical issue when using said polymer either alone or in combination with said copolymer of claim 13. This passage only confuses further what is meant by the ratios bound at page 23, in lines 16-20, and page 24, lines 15-18. Are the ratios with respect to polymer and copolymer or with respect to the amount of acid dissociable, dissolution inhibiting groups in polymer and copolymer? Thus, applicants have failed to show clear support in the original specification for new claim 13 which would reasonably convey to workers skilled in the relevant art that the inventor had at the time the application was filed had possession of the mixture claimed.

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Murakami et al (US 2007/0160927 and WO 2004/070473 a1) is of insufficient date to be prior art with respect to this application but the filing date of the foreign priority document precedes that of the instant application and applicants are not the same. The following paragraph

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from the US document shows 1-[2 -(1-adamantyloxy)ethoxy]ethyl as an acid dissociable group.

[0042] Including examples exemplified above, acid dissociable protecting groups can be exemplified with a group, tertiary carbon of which bonds with an oxygen atom such as tert-butyl, tert-butoxycarbonyl and tert-butoxycarbonylmethyl; a group of acetal type such as tetrahydro-2-pyranyl, tetrahydro-2-furyl, 1-methoxyethyl, 1-ethoxyethyl, 1-(2-methylpropoxy)ethyl, 1-(2-methoxyethoxy)ethyl, 1-(2-acetoxyethoxy)ethyl, 1-[2 -(1-adamantyloxy)ethoxy]ethyl, and 1-[2-(1-adamantanecarbonyloxy)ethoxy]ethyl; a remaining group of non-aromatic cyclic compounds such as 3-oxocyclohexyl, 4-methyltetrahydro-2-pyran-4-yl and 2-methyl-2-adamantyl. These are just examples of an acid dissociable protecting group and the resin containing an acid dissociable protecting group used in the present invention is not limited with these examples. Bucchignano et al (EP 0 932 082 A2) teach the insertion of the aliphatic polycyclo group into the center position of the acetal/ketal group as found on [0024] at methoxyadamantyl, But not at the instant X position.

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 12 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adams et al (US 2003/0232273 A1). With respect to instant claims 12 and 14, Adams et al teach the instant compositions with the exception of showing a working example of the phenolic resin with adamantyl groups as the alicyclic group on the acetal. In Adams et al, see Example 1.

However, at [0021] in Adams et al, the equivalence of adamantyl species with the working species for forming with alicyclic alcohol is taught with [0023] discloses the alicyclic alcohol as being reacted with a phenolic polymer to form the polymers to be mixed with photoacid generator to form resins which exhibit outstanding resistance to plasma etchants as taught by Adams et al in [0012]. The percentages of mers in the polymers of Adams et al are taught in [0039] and overlap of that of instant claim 13. In the case where the claimed ranges “overlap or lie inside ranges disclosed by the prior art” a *prima facie* case of obviousness exists. *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); *In re Woodruff*, 919 F.2d 1575, 16 UAPQ2d 1934 (Fed. Cir. 1990). See particularly MPEP 2144.05.

14. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned

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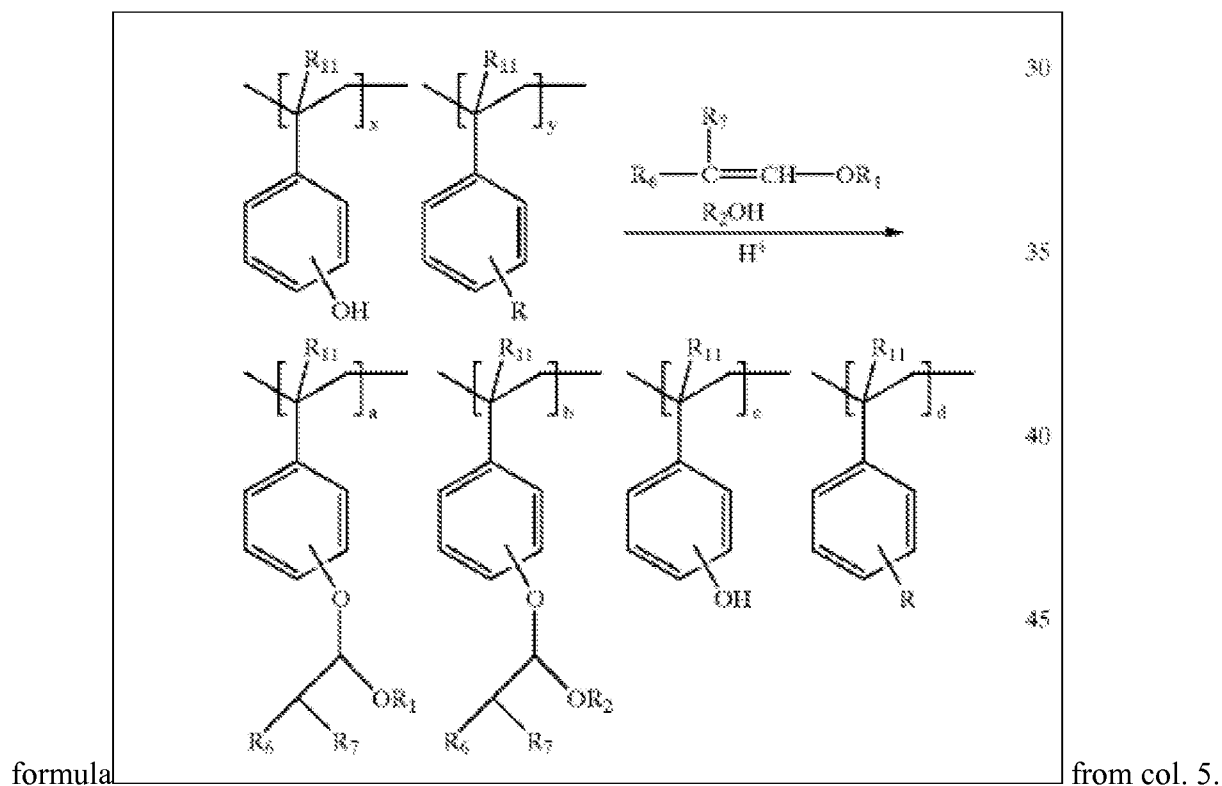
with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

15. Claim 12 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 6 of copending Application No. 10/586,694. Although the conflicting claims are not identical, they are not patentably distinct from each other because when choosing X as adamantyl group in claim 6 of copending Application No. 10/586,694 this species anticipates the composition of claim 12 in the present application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

16. Claims 1 and 4-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Malik et al (6,133,412) in view of Malik et al (SPIE Vol. 3678). With respect to instant claims 1 and 4-11, Malik et al (6,133,412) teach the instant compositions with the exception of showing a working example with the specific polymer used in a specific composition and using mixtures of such polymers. However, Malik et al (6,133,412) make polymers as examples which read on the instant polymers used in Examples 12, 13, 17 and 29 and disclose the use of species wherein R₂ of Malik et al is naphthyl, naphthyl ethyl or from nopol which is a polycyclic aliphatic alcohol cited in col. 6, lines 51-65 in the



The only polymers made which fit the instant polymer also fit the required instant polydispersity and molecular weight. Mixtures of these polymers are also taught by Malik et al (6,133,412) in col. 6-7, The use of amines such as triisopropylamine are taught in col. 15, lines 39-55 and the process of imaging compositions with these polymers in col. 16 of Malik et al (6,133,412) teach all of the instant invention with respect to these species of polymers for the tailoring of photoresists by mixing acetals. The use of naphthyl or nopyl groups for reducing volatility and contamination of the optics as well as improving etch resistance as taught by Malik et al (SPIE VOL. 3678) to form part of the mixture of Malik et al (6,133,412) would have been prima facie obvious. As to the use of mixtures of such polymers as found in Malik et al (6,133,412), the polymer mixture of instant claim 1 is comprised of a polymer comprised of two groups and a copolymer consisting essentially of three units. The polymer by description and the copolymer

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by description overlap. The use of "mixture" requires that two different polymers need to be used, but there is no requirement that the difference be outside that set forth by Malik et al (6,133,412). The use of mixtures of polymers which are within the description of polymer in Malik et al (6,133,412) would be the combination of prior art element according to known methods to yield predictable results.

17. Applicant's arguments filed November 29, 2007 have been fully considered but they are not persuasive. Applicants argue that neither Malik et al (6,133,412) or Malik et al (SPIE VOL. 3678) teach the instant mixture of polymer and copolymer. The examiner agrees that such a mixture is not disclosed, but she believes that the polymers described by Malik et al read on both the instant polymer and instant copolymer, thus the use of combinations of such polymers would have yielded a photoresist with similar properties and yield predictable results thus being obvious for that reason. The rejection stands.

18. Claim 15 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cynthia Hamilton whose telephone number is 571-272-1331.

The examiner can normally be reached on Monday through Friday 8:30 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia H. Kelly can be reached on (571) 272-0729. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Cynthia Hamilton/
Primary Examiner, Art Unit 1795

Cynthia Hamilton
Primary Examiner
Art Unit 1795

February 18, 2008